

REMARKS

Claims 1-3 remain in this application, claims 4-11 are canceled, and new claims 12-16 are added. Reconsideration of the application is requested.

The informalities referred to by the Examiner in section 7 on pages 4-5 of the Office Action are eliminated as a result of the claim amendments appearing above. All of the claims now present in this application comply with 35 U.S.C. § 112, second paragraph.

The comments relating to claims 4, 6-8, 10, and 11 set forth in sections 8 and 9 on page 5 of the Office Action are acknowledged with appreciation. For reasons discussed below, however, it is respectfully submitted that all of the claims appearing above are presently allowable.

Independent claim 1 is rejected, along with various dependent claims, as being anticipated by either U.S. Patent publication 2002/0011215 A1 to Tei et al. or U.S. Patent 6,091,045 to Mabuchi et al. Reconsideration is requested.

As it is presently defined by claim 1, this invention relates to a plasma processing apparatus in which a surface of a dielectric member has a projection provided in a circumferential direction of the dielectric member, and in which a corner- or edge-shaped portion of the projection has a curved surface. As a result of these features, the claimed plasma processing apparatus can suppress production of dust, particles, etc., as well as surface wave plasma which is harmful to plasma processing as discussed on pages 16-17 of the specification.

Neither the Tei et al. publication nor the Mabuchi et al. patent suggests an apparatus having a dielectric member with a projection provided in a circumferential direction of the dielectric member and in which a corner- or edge-shaped portion of the projection has a curved surface as claim 1 requires. The Tei et al. publication discloses a plasma treatment apparatus having a container, a gas supply, evacuation, and a microwave supply means. The surface of the microwave supply means is located opposite to the object being treated, and is a non-planar surface having a contour corresponding to that of the object being treated. The non-planar surface is formed of a microwave-transmitting dielectric. The Mabuchi et al. patent concerns a plasma processing apparatus

having a reaction chamber, a sample stage, a microwave generator, a waveguide, and a microwave window. An inner area of the microwave window, directly confronting a sample which is placed on the sample stage, is thinner than an outer area of the microwave window, and the inner area is at least as large as the sample. The inner area of the microwave window has an unobstructed view of all of the sample stage, and the microwave window is larger than the sample stage. Notwithstanding the foregoing, however, the Tei et al. publication and the Mabuchi et al. patent, taken as a whole, do not suggest a plasma processing apparatus including a dielectric member with a projection provided in a circumferential direction of the dielectric member and in which a corner- or edge-shaped portion of the projection has a curved surface as currently amended claim 1 defines.

In section 5 on page 4 of the Office Action, U.S. Patent 6,432,255 to Sun et al. is relied on as a secondary reference to reject claim 3. The Sun et al. patent disclosure, however, does not suggest modifying either the Tei et al. apparatus or the Mabuchi et al. apparatus so as to meet the limitations referred to and discussed above. It is submitted, therefore, that claim 1 is patentable, along with claims 2 and 3, which depend on claim 1.

New independent claim 12 defines a plasma processing apparatus in which a surface of a dielectric member facing an inside of a plasma processing chamber has a projection provided along longitudinal and transverse directions of the dielectric member. As a result of this structure, the plasma processing apparatus specified, again, can suppress production of dust, particles, etc., as well as surface wave plasma which is harmful to plasma processing. The documents previously relied on by the Examiner fail to suggest the features mentioned, as noted above, and it is submitted that new claim 12 is patentable. New claims 13-16 depend on claim 12 and are considered patentable as well. All claims now appearing in this application, therefore, are patentable.

If there are any questions regarding this Reply or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

Respectfully submitted,

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